

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

To:

see form PCT/ISA/220

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2005/004034

International filing date (day/month/year)  
09.02.2005

Priority date (day/month/year)  
11.02.2004

International Patent Classification (IPC) or both national classification and IPC  
INV. G06F3/033

Applicant  
MAROUN, Maroun Gregory

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

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Name and mailing address of the ISA:



European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Date of completion of  
this opinion

see form  
PCT/ISA/210

Authorized Officer

Pfaffelhuber, Thomas

Telephone No. +49 89 2399-8333



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of:
  - ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ on paper
    - ☐ in electronic form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in electronic form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

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**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

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The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of

- ☐ the entire international application
- ☒ claims Nos. 16-33

because:

- ☐ the said international application, or the said claims Nos.      relate to the following subject matter which does not require an international search (*specify*):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos.      are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed (*specify*):
- ☒ no international search report has been established for the whole application or for said claims Nos. 16-33
- ☐ a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:
  - ☐ furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.
  - ☐ furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.
  - ☐ pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13*ter*.1(a) or (b).
- ☐ a meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions, and such tables were not available to the International Searching Authority in a form and manner acceptable to it.
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☐ See Supplemental Box for further details

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has, within the applicable time limit:
- ☐ paid additional fees
  - ☐ paid additional fees under protest and, where applicable, the protest fee
  - ☐ paid additional fees under protest but the applicable protest fee was not paid
  - ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
  - ☒ the parts relating to claims Nos. 1-15

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-15
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	11-15
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations

**see separate sheet**

**WRITTEN OPINION OF THE  
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International application No.  
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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**Re Item IV.**

- 1 Reference is made to the following document:

D1: US-A-5 950 810 (PAN ET AL) 14 September 1999 (1999-09-14)

- 2 This Authority considers that there are two inventions covered by the claims indicated as follows:

I: Claims 1 to 15 directed to a computer pointing device comprising an inaudible input switch with damping material mounted to or supported on the upper surface of a resilient member.

II: Claims 16 to 33 directed to a computer pointing device comprising an inaudible input switch, the switch being silent because of the configuration of a resilient member.

The independent claims lack clarity in that they do not define all the essential features of the solution to solve the technical problem of noise. Just as an example, claim 16 merely defines the desired result without defining any technical feature how this could be achieved. It is however clear having regard to the dependent claims that the first group of claims (1 to 15) relates to a solution using damping material whereas the second group of claims (16 to 33) relies on a special construction of the resilient member (eg. claim 30).

For procedural efficiency, the two groups of claims will be discussed as were their independent claims amended to overcome the clarity objection.

- 2.1 The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows.
- 2.2 The prior art has been identified as document D1 (the references in parentheses applying to this document) and discloses a key switch device for a computer, the

switch comprising the following features:

a first electrical contact (40) for reading in user input to a computer; a movable input means including a second electrical contact (32) electrically connectable to said first electrical contact in response to the user input, at least one resilient member (20, 20') positioned above said second electrical contact (32), said resilient member being made of elastic material; and at least one moveable user input member (122) cooperating with said resilient member (20, 20') to selectively engage and disengage said first electrical contact (40) from said second electrical contact (32) wherein said resilient member (20, 20') reduces keyswitch noise.

2.3 It follows that the following technical features of claim 1 make a contribution over the prior art and can be considered as special technical features within the meaning of Rule 13.2 PCT:

2.3.1 The resilient member (110) is electrically conductive and closes the circuit between the first (40) and the second (32) electrical contact.

2.3.2 Damping material (132) is mounted to or supported on the upper surface of the resilient member (110).

The problem solved by these special technical features can therefore be construed as providing a compact, low-noise switching device.

2.4 The second invention is different from the system known from D1 in that it uses a specially constructed, cantilever-style resilient member which is only fixed at one end to the interface.

2.5 There is a fundamental difference between using damping material to form a barrier against existing noise and using a specially constructed resilient member which does not generate noise.

2.6 Examining the possible correspondence by technical effect, one finds that the technical effect of the first invention is to dampen switching noise and that the technical effect of the second invention is to avoid switching noise by providing a

silent switch.

- 2.7 Therefore, the two groups of claims do not define inventions which are characterized by a common inventive concept, and thus the requirements of unity of invention (Rule 13.1 PCT) are not met.

**Re Item V & VIII.**

- 3 The application does not meet the requirements of Article 6 PCT, because claim 1 is not clear.

- 3.1 It is not clear how the features of claim 1 achieve the result of providing an "inaudible [...] input". Any mechanical switching action does necessarily result in some sound. Inaudibility therefore can only be defined in relative terms, further defining eg. the distance between the switch and the user. The claim further specifies that "damping material dampens noise", not explaining whether or how that damping makes the input process indeed "inaudible".

- 3.2 The term "[hardware] interface" (cf. claims 1 and 23) is in computer technology commonly used to describe a communication boundary between two entities. Considering the description however, the applicant seems to describe an internal electrical switch (cf. reference sign 16).

- 4 The application does also not meet the requirements of Article 6 PCT, because throughout the application the term "input" is used for both a signal (cf. "communicating user input" in claim 1) and a hardware feature (cf. "movable input" in claim 1), thus making the described subject-matter unclear. The applicant should consider to use the term "input member" in those cases where the hardware feature is described.



5 For the sake of procedural efficiency, a substantive examination with respect to novelty and inventive step will be made under the assumption that claim 1 is directed at a computer pointing device comprising the following features:  
a switch (100) having a first electrical contact (108) for reading in user input to a computer; a second electrical contact (116) electrically connectable to said first electrical contact (108) via an electrically conductive (cf. description, page 7, line 27) resilient member (110) in response to said user input, the resilient member (110) positioned above said first (108) and second electrical contacts (116); a layer of damping material (132) is mounted to or supported on the curved upper surface of (cf. description, page 7, lines 30 to 31) said resilient member (110); and at least one moveable user input member (114) cooperating with said resilient member (116) to selectively engage and disengage said first electrical contact (108) from said second electrical contact (116) wherein said damping material (132) dampens noise generated by movement of said resilient member (110) in response to user input to said input member (114).

5.1 Such a clarified claim 1 presently seems to be novel and inventive in the sense of Articles 33(1) and 33(3) PCT. The same seems to apply to a set of thereof dependent claims, based on the clarified subject-matter of present claims 2 to 10.

6 Independent claim 11 is directed at a computer pointing device comprising a moveable input [member] that generates a user input signal that is communicated to a computer; and a damping mechanism that dampens noise generated by movement of said moveable input in response to user input.

6.1 As already discussed in paragraph 1.2 of this communication, all those features but "computer pointing device" are known in combination from D1. The latter feature, however, cannot supply an inventive step, because both a keyboard and a computer pointing device (eg. a computer mouse) are computer input devices. Being confronted with the problem of noise reduction, the skilled person would therefore regard it a normal design procedure to apply the teaching of D1 to a pointing device switch.

The present application does therefore not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 11 does not involve an inventive step in the sense of Article 33(3) PCT.

- 6.2 Dependent claims 12 to 15 do also not seem to overcome the lack of inventive step in respect to D1. However, a clarified set of claims 1 to 10 as suggested in paragraph 5 of this communication should both overcome the above raised objections and include the subject-matter of present claims 12 for 15; thus making these claims redundant.

**Re Item VII.**

- 7 The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art being placed in the preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
- 8 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 9 According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. This requirement is not met in view of the use of references 17/24 and 19/22.
- 9.1 Reference sign (17) in fig. 2 seems to identify the same feature as reference sign (24) in figures 3 and 5.
- 9.2 Reference sign (19) in fig. 2 seems to identify the same feature as reference

sign (22) in figures 3 and 5.

- 10 The applicant should remove an obvious inconsistency in the description, page 7. While lines 7 to 8 read "the resilient member (110) can be made of metal, polyester or any other suitable material", lines 26 to 27 read "the resilient member (110) [...] makes contact between electrical contacts 116, 108 to close the circuit". Polyester is generally considered as being an electrical insulator material, thus being obviously unable to electrically close a circuit.
- 11 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in document D1 is not mentioned in the description, nor is this document identified therein.

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